Docket No.: 8019 USA/MTCG/PCTRL/JW

REMARKS

Applicants respectfully request consideration of the subject application as amended herein. This Amendment is submitted in response to the Office Action mailed June 18, 2007. Claims 1-16 and 18-35 stand rejected. In this Amendment, claims 1-3, 9, 10, 12-14, 16, 22, 23, 25, 31 and 32 have been amended. No new matter has been added.

35 U.S.C. §103

Claims 1-4, 6-13, 16, 19-26, and 28-34 are rejected under 35 USC §103(a) as being unpatentable over Goldman et al. (U.S. Patent Application No. 2002/0128805, hereinafter "Goldman"), in view of Tan, et al., (Article: "Steady-State Regression Analysis and Optimization of Multivariate Plasma Etching System," hereinafter "Tan"). Applicants respectfully traverse the rejection and respectfully submit that the alleged combination of the cited references does not disclose each element of the recited claims. Applicants discuss the rejection below as it applies to independent claims 1, 12, 13, 16, 25, and dependent claims 2-11, 18-24 and 26-34.

As amended, claim 1 recites "(a) allowing a user to select one or more recipe parameters for a set of designed experiments; (b) allowing a user to specify that the recipe parameters are not a linear function of time .... (e) time-scaling collected data from running experiments based on recipe parameters specified as not a linear function of time to make the collected data appear as a linear function in a segment of time." The Examiner acknowledges that Goldman does not disclose "time-scaling" or linearization of collected data and cites Tan for such teaching, contending it would be obvious to combine Goldman with Tan to produce the present invention. The Examiner further responds that Goldman "allows the user to specify that the collected data is

a quadratic function and quadratic functions are not linear functions of time." Applicants respectfully disagree.

Unlike the present invention, Goldman does not allow a user to specify that the recipe parameters are not a linear function of time as required by claim1. Rather, Goldman Figure 1 teaches that a user can define the model type to be linear or quadratic with or without interactions. In addition, in Goldman Table 1, titled "Typically available model types," Goldman teaches defining a model type, not the recipe parameters, as linear or quadratic. Defining the model type to be quadratic is not the same as allowing a user to specify that recipe parameters are not a linear function of time. Unlike the present invention, Goldman teaches only that inputs ("parameters") may be named, identified as measurable or controlling, associated with a unit type, and associated with a range (upper/lower limits) (See Goldman [0071, 0072, 0075]). However, Goldman lacks the limitation that the recipe parameters can be time-based or constant value. Unlike the present invention, Goldman teaches only that the model type can be defined as linear or quadratic and does not teach that recipe parameters are allowed to not be linear functions of time, as taught in claim1.

While Tan discloses scaling a model, it does not teach or suggest allowing a user to specify that recipe parameters are not a linear function of time, as required by claim 1. Tan does not allow a user to define each recipe parameter as time-based or constant value. Tan discloses that the "initial regression equations were non-linear, so it was necessary for them to be linearized for determination of the appropriate steady state gains" (Tan p.1988 column 2). Tan teaches that the initial regression equations were non-linear and the model was scaled, but does not disclose that the user has a choice to specify that the individual recipe parameters are not a linear function of time, as taught in claim 1.

Hence, Tan lacks the same limitations that are missing from Goldman. Similar limitations are also included in independent claims 12, 13, 16 and 25. Thus, Goldman and Tan, taken alone or in combination, do not teach or suggest the present invention as claimed in claims 1, 12, 13, 16 and 25, and their corresponding dependent claims.

In view of the above, Applicants respectfully submit that claims 1-4, 6-13, 16, 19-26 and 28-34 are unobvious over the cited references and respectfully request that the rejection under 35 USC §103(a) of these claims be withdrawn.

Claims 5, 14, 15, 18, 27 and 35 are rejected under 35 USC §103(a) as being unpatentable over Goldman in view of Tan, as applied to claims 1, 13, 16 and 25 above, and further in view of Daft et al. (U.S. Patent Application No. 2003/0154062, hereinafter "Daft"). Applicants respectfully traverse the rejection and respectfully submit that the alleged recombination of the cited references does not disclose each element of the recited claims.

The Examiner agreed that Goldman et al. in view of Tan et al. does not appear to explicitly disclose that the designed experiment is imported from an "external system," but cites Daft et al. as teaching that "the system comprises a DOE controller that can automatically import the DOE data and generate transfer functions from the simulation-based data." Applicants respectfully disagree.

Claim 5 recites "importing one or more designed experiments from an external system." However, Daft teaches that the "DOE controller can automatically import the DOE data" (Daft [0046]), but fails to teach that any experiments are imported, as required by claim 5. Furthermore, Daft discloses "the DOE controller further comprises a transfer function tool which imports the generated transfer functions" (Daft [0046]), but these transfer functions are generated

from within the same system ("The DOE controller comprises a regression tool which generates transfer functions" Daft [0046]). Unlike the present invention, Daft does not teach importing experiments or importing from an external system.

In addition, the Examiner, citing Goldman [0008]-[0011], responds that it would have been obvious since Goldman et al. teach that a user of a semiconductor tool may find it desirable to import or use a designed experiment from the tool manufacturer in order to allow for operation of the tool before a statistically significant data set can be obtained. However, the cited passage fails to disclose importing experiments, and merely describes how data is not willingly shared among competitors. Unlike the disadvantage disclosed in Goldman, the present invention describes the user's ability to import experiments from other DOE systems. Hence, each of Goldman and Daft fails to teach or suggest importing one or more designed experiments from an external system. Tan lacks the same limitation that is missing from Goldman and Daft.

Similar limitations are also included in independent claims 14, 15, 18, 27 and 35. Thus, Goldman, Daft and Tan, taken alone or in combination, do not teach or suggest the present invention as claimed in claims 5, 14, 15, 18, 27 and 35, and their corresponding dependent claims.

In view of the above, Applicants respectfully submit that claims 5, 14, 15, 18, 27 and 35 are unobvious over the cited references and respectfully request that the rejection under 35 USC §103(a) of these claims be withdrawn.

As discussed above, each of Goldman and Tan fails to teach or suggest allowing a user to specify that recipe parameters are not a linear function of time, as required by claims 1, 12, 13, 16 and 25. These limitations are also missing from Daft. Thus, the cited references, taken alone

or in combination, do not teach or suggest the present invention as claimed in claims 1, 12, 13, 16 and 25. Claims 5, 14, 15, 18, 27 and 35 depend directly or indirectly from claims 1, 12, 13, 16 and 25, and are therefore patentable over the cited references for the same reasons.

In view of the above, Applicants respectfully submit that claims 5, 14, 15, 18, 27 and 35 are unobvious over the cited references and respectfully request that the rejection under 35 USC §103(a) of these claims be withdrawn.

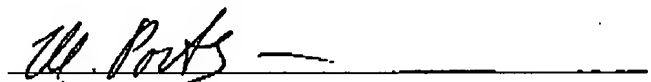
Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Marina Portnova at (408) 720-8300.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: September 18, 2007



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